OMAERUV Release Specific Information

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Release date: 31 October 2006

Software Version: OMAERUV v1.0.4

ECS Collection 2

Known Issues

The OMAERUV software applies adjustments to the radiance measurements at the wavelengths used in the retrieval: 354.0 nm, 388 nm, and 471 nm. These adjustments are derived using a refinement of the procedure used to correct the cross-track problems with Earth Probe (EP) TOMS after 1999. The OMAERUV orbital output file stores the wavelengths and their corresponding adjustments for each cross-track position in the swath attributes section of the HDF metadata.

Retrievals over the remote oceans in both hemispheres are affected by the wavelength dependent effect of clear water absorption. This effect yields spurious aerosol absorption and a slight over-estimation of the extinction optical depth. This artifact has been reduced by accounting for the spectral dependence of the ocean surface albedo at 354 and 388 nm. A similar effect (but smaller in magnitude) occurs over arid and semi-arid land areas. Spurious aerosol absorption retrievals may still occur when the actual surface spectral contrast differs significantly from the assumed climatological values.

Sub-pixel cloud contamination is a major problem in the Level2 OMAERUV aerosol product. The problem is worst over the oceans and over land areas where the atmospheric aerosol load is small (lower than about 0.5 at 388). Based on previous experience with the TOMS aerosol algorithm, typical errors in optical depth associated with sub-pixel cloud contamination are between 0.2~0.3.

In some instances when the aerosol load consists of carbonaceous aerosols (BIO) in the upper troposphere, the aerosol type may be misidentified as dust (DST). A solution for this problem is under investigation.

Release History

November 15, 2005, OMAERUV provisional release used software version v0.9.62.
October 31, 2006 OMAERUV public release version 1.0 used software version v1.0.4